

This listing of claims will replace all prior versions,  
and listings, of claims in the application:

Claim 1 (canceled)

1 Claim 2 (currently amended): In a network having a  
2 plurality of nodes arranged in at least two zones, a method  
3 for a particular node to determine a current partial  
4 topological state of the network, the method comprising:

5 a) determining a zone of the network in which the  
6 particular node resides;

7 b) for each node in the zone, determining nodes  
8 having a physical communication link with the node in  
9 the zone; and

10 c) for each zone in the network, determining zones  
11 having a virtual connection with the zone in the  
12 network,

13 ~~The method of claim 1~~ wherein the act of determining nodes  
14 having a physical communication link with the node in the  
15 zone includes:

16 i) broadcasting a link request from the node;

17 ii) if a response to the link request is  
18 received by the node,

19 A) if the response was from a node within  
20 the same zone as the node, storing an  
21 identifier of the responding node, and

22 B) if the response was from a node that is  
23 not within the same zone as the node,  
24 storing an identifier of the zone to which  
25 the responding node belongs; and

26 iii) broadcasting, from the particular node, a  
27 link state message including the identifier of

28           the responding node if the response was from a  
29           node within the same zone and the identifier of  
30           the zone to which the responding node belongs if  
31           the response was from a node not within the same  
32           zone as the node.

1   Claim 3 (original): The method of claim 2, wherein the act  
2   of determining nodes having a physical communication link  
3   with the node in the zone further includes:

4           iv) if a link state message is received, by the  
5           node, from another node, then storing the link  
6           state message if the other node is within the  
7           same zone as the particular node.

1   Claim 4 (currently amended): In a network having a  
2   plurality of nodes arranged in at least two zones, a method  
3   for a particular node to determine a current partial  
4   topological state of the network, the method comprising:

5           a) determining a zone of the network in which the  
6           particular node resides;  
7           b) for each node in the zone, determining nodes  
8           having a physical communication link with the node in  
9           the zone; and  
10          c) for each zone in the network, determining zones  
11          having a virtual connection with the zone in the  
12          network,

13   ~~The method of claim 1,~~ wherein the act, for each zone in  
14   the network, of determining zones having a virtual  
15   connection with the zone in the network includes:

16          i) determining whether another zone has a node  
17          with a physical communications link with a node  
18          in the zone, and

19           ii) if it is determined that the other zone has  
20           a node with a physical communications link with  
21           the zone in the zone, then storing a data  
22           structure including an identification of the  
23           other zone.

1   Claim 5 (previously presented): The method of claim 4,  
2   wherein the act, for each zone in the network, of  
3   determining zones having a virtual connection with the zone  
4   in the network further includes:

5           iii) sending the stored data structure,  
6           including the identification of the other zone,  
7           throughout the network.

1   Claim 6 (previously presented): The method of claim 5  
2   wherein the stored data structure, including the  
3   identification of the other zone, is only broadcast by  
4   gateway nodes.

Claim 7 (canceled)

1   Claim 8 (currently amended): In a network having a  
2   plurality of nodes arranged in at least two zones, a method  
3   for a particular node to determine a current partial  
4   topological state of the network, the method comprising:  
5       a) for each node in a zone in which the particular  
6       node resides, determining nodes having a physical  
7       communication link with the node in the zone; and  
8       b) for each zone in the network, determining zones  
9       having a virtual connection with the zone in the  
10      network,

11 ~~The method of claim 7~~ wherein the act of determining nodes  
12 having a physical communication link with the node in the  
13 zone includes:  
14           i) broadcasting a link request from the node;  
15           ii) if a response to the link request is  
16           received by the node,  
17                A) if the response was from a node within  
18                the same zone as the node, storing an  
19                identifier of the responding node, and  
20                B) if the response was from a node that is  
21                not within the same zone as the node,  
22                storing an identifier of the zone to which  
23                the responding node belongs; and  
24           iii) broadcasting, from the particular node, a  
25           link state message including the identifier of  
26           the responding node if the response was from a  
27           node within the same zone as the node and the  
28           identifier of the zone to which the responding  
29           node belongs if the response was from a node that  
30           is not within the same zone as the node.

1 Claim 9 (currently amended): In a network having a  
2 plurality of nodes arranged in at least two zones, a method  
3 for a particular node to determine a current partial  
4 topological state of the network, the method comprising:  
5       a) for each node in a zone in which the particular  
6       node resides, determining nodes having a physical  
7       communication link with the node in the zone; and  
8       b) for each zone in the network, determining zones  
9       having a virtual connection with the zone in the  
10       network,

11 ~~The method of claim 7~~, wherein the act, for each zone in  
12 the network, of determining zones having a virtual  
13 connection with the zone in the network includes:  
14           i) determining whether another zone has a node  
15           with a physical communications link with a node  
16           in the zone, and  
17           ii) if it is determined that the other zone has  
18           a node with a physical communications link with  
19           the zone in the zone, then storing a data  
20           structure including an identification of the  
21           other zone.

1 Claim 10 (original): In a network having a plurality of  
2 nodes arranged in at least two zones, a method for  
3 transmitting data from a first node in the network to a  
4 second node in the network, the method comprising:  
5       a) determining whether or not the second node is in  
6       the same zone as the first node;  
7       b1) if it is determined that the second node is in  
8       the same zone as the first node, then routing the data  
9       towards the second node based on an intra-zone routing  
10      table; and  
11      b2) if it is determined that the second node is not  
12      in the same zone as the first node, then  
13          i) transmitting a location request,  
14          ii) if a response to the location request is  
15          received, then ensuring that the data is provided  
16          with a zone identifier and node identifier for  
17          the second node, and  
18          iii) routing the data based on an inter-zone  
19          routing table.

Claim 11 (canceled)

1 Claim 12 (previously presented): In a network having a  
2 plurality of nodes arranged in at least two zones, a method  
3 for a particular node to respond to a request for the  
4 location of a destination node, the method comprising:  
5 a) determining whether or not the destination node is  
6 in the zone of the particular node; and  
7 b) if the zone of the destination node is in the zone  
8 of the particular node, transmitting a reply message  
9 which includes an identifier of the zone of the  
10 particular node,  
11 wherein the step of determining whether or not the  
12 destination node is in the zone of a particular node is  
13 done based on the contents of an intra-zone routing table of  
14 the particular node.

1 Claim 13 (original): In a network having a plurality of  
2 nodes arranged in at least two zones, a method for a  
3 particular node to forward data towards a destination node  
4 in a destination zone, the method comprising:  
5 a) determining whether or not the destination zone of  
6 the data is the same as the zone of the particular  
7 node;  
8 b1) if it is determined that the destination zone of  
9 the data is not the same as the zone of the particular  
10 node, then advancing the data towards the destination  
11 zone based on an inter-zone routing table; and  
12 b2) if it is determined that the destination zone of  
13 the data is the same as the zone of the particular  
14 node, but that the particular node is not the

15 destination node, then advancing the data towards the  
16 destination node based on an intra-zone routing table.

1 Claim 14 (original): The method of claim 13 further  
2 comprising:

3 b3) if it is determined that the destination zone of  
4 the data is the same as the zone of the particular  
5 node, and that the particular node is the destination  
6 node, then reading the data.

1 Claim 15 (original): A network having a plurality of nodes  
2 arranged in at least two zones, each node comprising:

3 a) a storage device, the storage device storing  
4 i) a value identifying one of the at least two  
5 zones in which the current node resides,  
6 ii) a list of nodes with which the current node  
7 has a physical communications link, and  
8 iii) a list of zones with which the one of the  
9 at least two zones has a virtual connection; and  
10 b) a processor which can access information stored on  
11 the storage device.

1 Claim 16 (original): The network of claim 15, wherein the  
2 storage device further stores

3 iv) an intra-zone routing table, and  
4 v) an inter-zone routing table.

1 Claim 17 (original): The network of claim 15, wherein the  
2 storage device further stores

3 iv) a list of zones which include a node with  
4 which the current node has a physical  
5 communications link.

1 Claim 18 (original): In a network having a plurality of  
2 nodes arranged in at least two zones, a node comprising:

- 3 a) a storage device, the storage device storing
  - 4 i) a value identifying one of the at least two
  - 5 zones in which the current node resides,
  - 6 ii) a list of nodes with which the current node
  - 7 has a physical communications link, and
  - 8 iii) a list of zones with which the one of the
  - 9 at least two zones has a virtual connection; and
- 10 b) a processor which can access information stored on
- 11 the storage device.

1 Claim 19 (original): The node of claim 18, wherein the  
2 storage device further stores

- 3 iv) an intra-zone routing table, and
- 4 v) an inter-zone routing table.

1 Claim 20 (original): The node of claim 18, wherein the  
2 storage device further stores

- 3 iv) a list of zones which include a node with
- 4 which the current node has a physical
- 5 communications link.

1 Claim 21 (original): In a network having a plurality of  
2 nodes arranged in at least two zones, a method for a  
3 particular node to generate intra-zone and inter-zone  
4 routing tables based on a partial topological current state  
5 of the network, the method comprising:

- 6 a) determining a zone of the network in which
- 7 the particular node resides;
- 8 b) for each node in the zone, determining nodes



9           having a physical communication link with the  
10           node in the zone;  
11           c)   determining an intra-zone routing table from  
12           the nodes determined to have a physical  
13           communication link with the node in the zone;  
14           d)   for each zone in the network, determining  
15           zones having a virtual connection with the zone  
16           in the network; and  
17           e)   determining an inter-zone routing table from  
18           the zones determined to have a virtual connection  
19           with the zone in the network.

1   Claim 22 (original):   In a network having a plurality of  
2   nodes arranged in at least two zones, a method for a  
3   particular node to generate intra-zone and inter-zone  
4   routing tables based on a partial topological current state  
5   of the network, the method comprising:

6           a)   for each node in the zone, determining nodes  
7           having a physical communication link with the  
8           node in a zone in which the particular node  
9           resides;  
10          b)   determining an intra-zone routing table from  
11          the nodes determined to have a physical  
12          communication link with the node in the zone;  
13          c)   for each zone in the network, determining  
14          zones having a virtual connection with the zone  
15          in the network; and  
16          d)   determining an inter-zone routing table from  
17          the zones determined to have a virtual connection  
18          with the zone in the network.